

ARRANGEMENTS FOR INCREASING SPUTTER LIFE
IN GAS DISCHARGE TUBES

ABSTRACT OF THE DISCLOSURE

A gas discharge tube, such as a ring laser gyroscope, includes a block, a cathode, and an anode. At least a portion of the block is maintained at a reference potential. The cathode may be biased at a higher potential than the reference potential, and the anode may be biased at a higher potential than the cathode.

Alternatively, the cathode may be biased at a lower potential than the reference potential, and the anode may be biased at a higher potential than the reference potential. These biases enhance the flow of negative oxygen ions and impede the flow of positive alkali ions to increase sputter life of the gas discharge tube.

Additionally or alternatively, a biasing electrode may be applied to the block to overlie the plasma supporting passage between the cathode and the anode. The biasing electrode has a bias to attract positive alkali ions.